unit;

Filing Date: December 22, 2000 Attorney Docket No. 100.047USR4

Title: CELLULAR COMMUNICATIONS SYSTEM WITH SECTORIZATION

Amendments to claims under 37 C.F.R. 1.173(b):

10. A method of transmitting an RF signal between a base station and at least one remote unit that wirelessly communicates with at least one wireless unit, the method comprising:

generating a digitized representation of the RF signal at the base station, wherein the RF signal is a combined analog signal representing a plurality of outbound wireless transmissions for a set of channels; and

transmitting the digitized representation to the remote unit.

14. A method of transmitting wireless transmissions between a base station and a remote unit that wirelessly communicates with at least one wireless unit, the method comprising:

generating a set of RF analog modulated channel carriers representing outbound transmissions, wherein each RF analog modulated channel carrier corresponds, in a one-to-one relationship, to a channel in a set of channels used by the remote unit;

combining the set of RF analog modulated channel carriers into a combined RF signal;

generating a digitized representation of the combined RF signal at the base station; and

transmitting the digitized representation to the remote unit.

18. A method of transmitting RF signals between a base station and a remote unit that wirelessly communicates with at least one wireless unit, the method comprising:

receiving a plurality of outbound input signals from a network, wherein the plurality of outbound input signals correspond to a set of channels used by the remote

generating an RF analog outbound channel carrier for each channel in the set of channels used by the remote unit;

Filing Date: December 22, 2000 Attorney Docket No. 100.047USR4

Title: CELLULAR COMMUNICATIONS SYSTEM WITH SECTORIZATION

analog modulating each of the plurality of outbound input signals onto a corresponding one of the RF analog outbound channel carriers, thereby generating a plurality of RF analog modulated channel carriers;

combining the plurality of RF analog modulated channel carriers into a combined RF signal;

generating a digitized representation of the combined RF signal at the base station; and

transmitting the digitized representation to the remote unit.

19. A method of transmitting RF signals between a remote unit and a base station, the method comprising:

receiving at the remote unit an inbound combined RF signal comprising a plurality of inbound RF signals from a plurality of mobile units;

generating a digitized representation of the combined RF signal at the remote unit; and

transmitting the digitized representation to the base station.

20. A method of transmitting RF signals between a remote unit and a base station, the method comprising:

receiving at the remote unit a combined RF signal comprising a plurality of simultaneous inbound RF signals in a set of channels from a plurality of mobile units; digitizing the combined RF signal; and

transmitting the digitized combined RF signal to the base station.

23. A method of transmitting RF signals between a base station and a plurality of mobile units, the method comprising:

receiving a plurality of outbound input signals from a network, wherein the plurality of outbound input signals correspond to a set of channels used by a remote unit;

Filing Date: December 22, 2000 Attorney Docket No. 100.047USR4

Title: CELLULAR COMMUNICATIONS SYSTEM WITH SECTORIZATION

generating an RF analog outbound channel carrier for each channel in the set of channels used by the remote unit;

analog modulating each of the plurality of outbound input signals onto a corresponding one of the RF analog outbound channel carriers, thereby generating a plurality of RF analog modulated channel carriers;

combining the plurality of RF analog modulated channel carriers into a first combined RF signal;

generating a digitized representation of the first combined RF signal at the base station;

transmitting the digitized representation to the remote unit;

generating a second combined RF signal from the digitized representation of the first combined RF signal at the remote unit; and

broadcasting the second combined RF signal from the remote unit to the plurality of mobile units.

Please cancel claims 24-58 (which were previously added to the reissue application) without prejudice.

Please add the following new claims 59-105:

<u>59. </u>	A first communication device for communicating with a second communication
device	in a wireless communications system over a communication medium, the first
commi	unication device comprising:

a digital unit that outputs a digital representation of an analog signal, the analog signal comprising a single signal that includes a plurality of RF channels, the plurality of RF channels including at least one of information being transmitted to a plurality of remote wireless communication units and information being transmitted from the plurality of remote wireless communication units;

wherein the first communication device transmits a transmission signal over the communication medium to the second communication device;

Filing Date: December 22, 2000 Attorney Docket No. 100.047USR4

Title: CELLULAR COMMUNICATIONS SYSTEM WITH SECTORIZATION

	wherein the transmission signal includes the digital representation; and
	wherein the second communication device is physically remote from the first
device	

- 60. The first communication device of claim 59 wherein the first communication device is an antenna unit in a wireless telephone communication system and the second communication device is located at a base station.
- 61. The first communication device of claim 60 wherein the first communication device includes an antenna for receiving wireless RF telephone transmissions from mobile units located in a cell associated with the antenna unit.
- 62. The first communication device of claim 60 wherein the digital unit is a broadband digitizer.
- 63. The first communication device of claim 60 wherein the transmission signal includes one of control data and error checking data.
- 64. The first communication device of claim 60 wherein the digital representation comprises a first digital representation and wherein the transmission signal further includes a second digital representation that has been multiplexed with the first digital representation.
- 65. The first communication device of claim 64 wherein the second digital representation is a diversity signal.
- 66. The first communication device of claim 64 wherein the second digital representation is a representation of at least a portion of a radio frequency spectrum, the portion comprising a plurality of channels.

Filing Date: December 22, 2000 Attorney Docket No. 100.047USR4

Title: CELLULAR COMMUNICATIONS SYSTEM WITH SECTORIZATION

67. The first communication device of claim 60 wherein the transmission signal includes at least one of control data and error checking data.

- 68. The first communication device of claim 60 wherein the digital representation is a first digital representation and wherein the transmission signal includes a second digital representation multiplexed with the first digital representation.
- 69. The first communication device of claim 68 wherein the second digital representation is a diversity signal.
- 70. The first communication device of claim 59 wherein the first communication device is located at a base station and the second communication device is an antenna unit in a wireless telephone communication system.
- 71. The first communication device of claim 70 wherein the transmission signal includes one of control data and error checking data.
- 72. The first communication device of claim 70 wherein the digital unit is a broadband digitizer.
- 73. The first communication device of claim 70 wherein the transmission signal includes at least one of control data and error checking data.
- 74. The first communication device of claim 59, wherein the communication medium includes an optical fiber.
- 75. The first communication device of claim 74 further comprising a transmitter and wherein the optical fiber couples the transmitter to the second communication device.

Filing Date: December 22, 2000 Attorney Docket No. 100.047USR4

Title: CELLULAR COMMUNICATIONS SYSTEM WITH SECTORIZATION

76. The first communication device of claim 59, wherein the first communication device includes a digitally modulated laser. In a wireless communication system, a method of transmitting communications between a first communication device and a second communication device, the first communication device comprising an antenna unit associated with a cell, the second communication device remotely located from the first communication device, the method comprising: receiving at the second communication device a composite analog signal that as a single composite signal includes a plurality of RF channels; digitizing the composite analog signal into a digitized signal representing the plurality of RF channels; transmitting the digitized signal over a communication medium from the second communication device to the first communication device. 78. The method of claim 77 wherein the second communication device is located at a base station.

PAGE 8

Serial No.: 09/747,273

Filing Date: December 22, 2000 Attorney Docket No. 100.047USR4

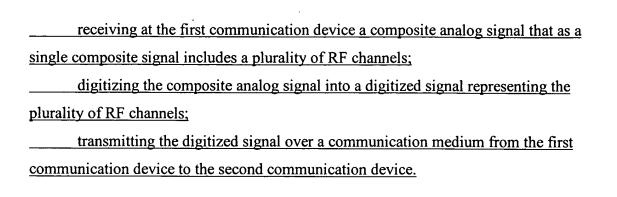
Title: CELLULAR COMMUNICATIONS SYSTEM WITH SECTORIZATION

79. The method of claim 78 wherein the receiving is performed at the base station.

- 80. The method of claim 78 wherein the digitized signal comprises a first digitized signal and wherein the method further comprises transmitting a second digitized signal over the communications medium from the first communication device to the second communication device.
- 81. The method of claim 80 further comprising combining at the base station a plurality of separate analog outbound telephone signals into the composite analog signal.
- 82. The method of claim 80 wherein the second digitized signal represents a broadband digitization of a composite analog signal that includes a plurality of RF channels.
- 83. The method of claim 77 further comprising, after transmitting, reconstructing the composite analog signal from the digitized signal at the first communication device.
- 84. The method of claim 83 further comprising broadcasting the reconstructed composite analog signal into the cell.
- 85. The method of claim 77 wherein the communications medium is optical fiber.
- 86. In a wireless communication system, a method of transmitting communications between a first communication device and a second communication device, the first communication device comprising an antenna unit associated with a cell, the second communication device remotely located from the first communication device, the method comprising:

Filing Date: December 22, 2000 Attorney Docket No. 100.047USR4

Title: CELLULAR COMMUNICATIONS SYSTEM WITH SECTORIZATION



- 87. The method of claim 86 wherein the second communication device is located at a base station.
- 88. The method of claim 87 wherein the receiving is performed by an antenna at the first communication device receiving a plurality of wireless RF transmissions from telephones located in the cell.
- 89. The method of claim 87 further comprising reconstructing the composite analog signal from the digitized signal at the base station after transmitting.
- 90. The method of claim 89 further comprising separating individual channels out of the composite analog signal after reconstructing the composite analog signal from the digitized signal.
- 91. The method of claim 87 wherein the digitized signal comprises a first digitized signal and wherein the method further comprises transmitting a second digitized signal over the communications medium the second digitized signal being transmitted from the second communication device to the first communication device.
- 92. The method of claim 91 further comprising combining at the base station a plurality of separate analog outbound telephone signals into a composite analog signal,

Filing Date: December 22, 2000 Attorney Docket No. 100.047USR4

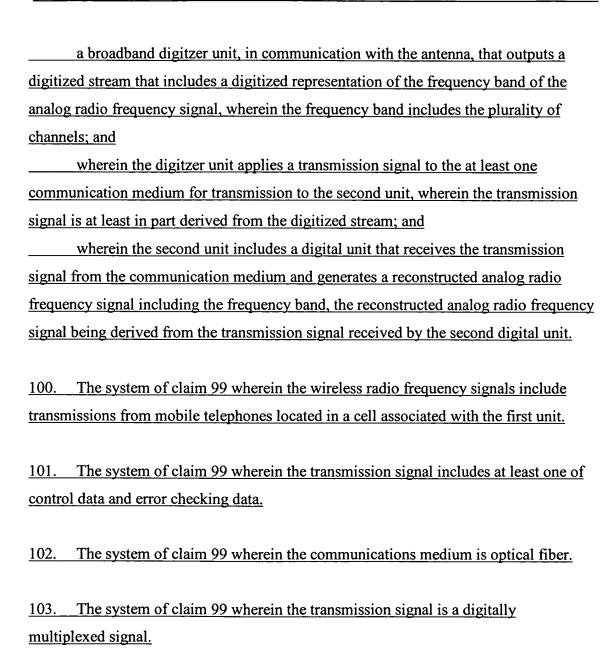
Title: CELLULAR COMMUNICATIONS SYSTEM WITH SECTORIZATION

and digitizing the composite analog signal as a single signal to form the second digitized signal.

- 93. The method of claim 92 wherein at least one of control data and error checking data is transmitted over the communication medium with the second digitized signal.
- 94. The method of claim 86 further comprising reconstructing the composite analog signal from the digitized signal after transmitting the digitized signal over the communication medium.
- 95. The method of claim 86 wherein the communications are mobile telephone transmissions.
- 96. The method of claim 86 wherein at least one of control data and error checking data is transmitted over the communication medium with the digitized signal.
- 97. The method of claim 86 further comprising multiplexing the digitized signal with another digital signal prior to transmitting the digitized signal over the communication medium.
- 98. The method of claim 97 wherein the another digitized signal is a diversity signal.
- 99. A wireless communications system in communication with an antenna that receives wireless radio frequency signals from wireless units over a plurality of channels within a frequency band, wherein the antenna outputs an analog radio frequency signal including the frequency band, the system comprising:
- a first unit in communication with a second unit using at least one communication medium, the first unit including:

Filing Date: December 22, 2000 Attorney Docket No. 100.047USR4

Title: CELLULAR COMMUNICATIONS SYSTEM WITH SECTORIZATION



104. The system of claim 103 wherein the digital representation output by the broadband digitizer is a first digital representation and wherein the transmission signal includes a diversity digital representation of the frequency band digitally multiplexed with the first digital representation.

Filing Date: December 22, 2000 Attorney Docket No. 100.047USR4

Title: CELLULAR COMMUNICATIONS SYSTEM WITH SECTORIZATION

105. The system of claim 99 wherein the wireless communications are mobile telephone signals.